

## **ABSTRACT**

A microelectronic package may include front and rear covers overlying the front and rear surfaces of a microelectronic element such as an infrared sensor and spaces between the microelectronic element and the covers to provide thermal isolation. A sensing unit including a microelectronic package may include a reflector spaced from the front cover to provide an analyte space, and the microelectronic element may include an emitter and a detector so that radiation directed from the emitter will be reflected by the sensor to the detector, and such radiation will be affected by the properties of the analyte in the analyte space. Such a unit provides a compact, economical chemical sensor. Other packages include elements such as valves for passing fluids into and out of the spaces within the package itself.